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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,837	09/07/2004	Thomas Vollmer	DE 020061	8928

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EXAMINER	
FIGUEROA, MARISOL	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/506,837	VOLLMER ET AL.	
	Examiner	Art Unit	
	Marisol Figueroa	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 June 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-5 and 11-20 have been considered but are moot in view of the new ground(s) of rejection. See rejection below.

2. In response to the arguments that the Belsak reference (US 2004/0067745) used for rejecting claims 1-3, 6, 9 and 10 under 35 U.S.C. 102(e) is predated by the priority date of the present application, because the present application is the U.S. national stage filing of international application No. PCT/IB03/000873, filed March 3, 2003, which has benefit of German Patent Application No. 102 10 858.7, filed March 12, 2002. Thus the priority date of the application is March 12, 2002, and the Belsak reference reveals a filing date of October 2, 2002 (see page 7 of Applicant's arguments).

However, the Examiner respectfully disagrees. The Belsak reference was filed on October 2, 2002 and this date is prior to the effective filing date of the present application of March 3, 2003 (PCT filing date). Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-3, 6, 9, and 10** are rejected under 35 U.S.C. 102(e) as being anticipated by BELSAK, JR. (US 2004/0067745 A1).

Regarding claim 1, Belsak discloses a method for data transmission in a power supply network, the method comprising:

receiving data transmitted on a particular phasing line (11) of the power supply network at a first transceiver; and re-transmitting the received data at a second transceiver on at least one phasing line (12, 13) different from the said phasing line (11) (Fig. 3; Abstract, lines 1-7; paragraphs [0011]-[0015], and [0068]; figure 3 illustrates a power-line communication network comprising phase lines P_1, P_2 and P_3 and a plurality of repeaters 71, 72, ... which repeats communication data contained in signal S_0, for example, repeater 71 (i.e., first transceiver) receives signal S_0 and repeats or transmits the signal to repeater 72 (i.e., second transceiver) which then transmits the signal S_2 over P_2).

Regarding claim 2, Belsak discloses a method as claimed in claim 1, in addition Belsak discloses characterized in that the data is re-transmitted on all phasing lines (11 - 13) (Fig. 3; Abstract, lines 1-7; paragraphs [0011]-[0021], and [0068]; figure 3 illustrates a power-line communication network comprising phase lines P_1, P_2 and P_3 and a plurality of repeaters 71, 72, ... which repeats communication data contained in signal S_0, for example, repeater 71 receives signal S_0 and repeats or transmits the signal to repeater 72 which then transmits the signal S_2 over P_2 and this continues until the signal is transmitted in all phase lines P_1, P_2 and P_3 as shown in figure 3).

Regarding claim 3, Belsak discloses a method as claimed in claim 1, in addition Belsak discloses characterized in that the data is re-transmitted on the phasing lines (11-13) on which its original signal strength lay below a threshold value (paragraphs [0011]-[0015], and [0037] lines 1-9; the communication signals transmitted over the power lines are repeated (i.e., re-transmitted) in order to keep the communication signals from being reduced below a predefined level).

Regarding claim 6, Belsak discloses a device (1) for data transmission in a power supply network, comprising a receiver (3 - 5) for receiving data transmitted on a first phasing line (ii - 13) of the power supply network, and a transmitter (3 - 5) for transmitting data on a second phasing line (12 - 13) of the power supply network, characterized in that the first and second phasing lines are different (Fig. 3 and 5a; Abstract, lines 1-7; paragraphs [0011]-[0015], [0068], and [0070]; repeaters 71, 72,... (included in phase lines P_1, P_2 and P_3) re-transmit communication data from one phase line P_1 to another P_2, the repeaters as shown in figure 5a comprises an RF coupler 170 (i.e., receiver) to receive RF signal S_0 and a RF antenna 174 (i.e., transmitter) for transmitting signals 102 indicative of signals S_0).

Regarding claim 9, Belsak discloses a device as claimed in claim 6, in addition Belsak discloses characterized in that it is equipped with additional transmitting and receiving modules for connection to other networks with different transmission methods (paragraphs [0034]-[0036]).

Regarding claim 10, Belsak discloses a device as claimed in claim, in addition Belsak discloses characterized in that it is equipped with an additional network filter for separation of an in-home network from an external network, wherein a further

transmitter and receiver are preferably integrated on the external side, and selected data is routed past the filter (Fig. 3; paragraph [0070]; the repeaters comprises an analog front-end (i.e., filter) which filters and processes the received signals).

Regarding claim 11, Belsak discloses a device for data transmission in a power supply network including a first phasing line and a second phasing line different from the first phasing line, the device comprising:

a first transceiver coupled to the first phasing line of the power supply network to receive data transmitted on the first phasing line; and a second transceiver coupled to a second phasing line of the power supply network to retransmit the data received by the first transceiver on the second phasing line (Fig. 3; Abstract, lines 1-7; paragraphs [0011]-[0015], and [0068]; figure 3 illustrates a power-line communication network comprising phase lines P_1, P_2 and P_3 and a plurality of repeaters 71, 72, ... which repeats communication data contained in signal S_0, for example, repeater 71 (i.e., first transceiver) receives signal S_0 over P_1 (i.e., first phasing line) and repeats or transmits the signal to repeater 72 (i.e., second transceiver) which then transmits the signal S_2 over P_2 (i.e., second phasing line)).

5. **Claims 1 and 11** are rejected under 35 U.S.C. 102(b) as being anticipated by CHANG et al. (US 5,010,544).

Regarding claim 1, Chang discloses a method for data transmission in a power supply network, the method comprising:

receiving data transmitted on a particular phasing line (11) of the power supply network at a first transceiver; and re-transmitting the received data at a second transceiver on at least one phasing line (12, 13) different from the said phasing line (11) (Abstract, lines 1-18; col. 6, line

56-col. 7, lines 1-9; the system comprises a plurality of transmission links L_i, for i=1 through N, and a plurality of repeaters R_i (i.e., transceivers), for i=1 through N-1, that are used to interconnect the transmission links and each repeater repeats the data transmitted from the one transmission link L_i for transmission on the other transmission link L_{i+1}).

Regarding claim 11, Chang discloses a device for data transmission in a power supply network including a first phasing line and a second phasing line different from the first phasing line, the device comprising:

a first transceiver coupled to the first phasing line of the power supply network to receive data transmitted on the first phasing line; and a second transceiver coupled to a second phasing line of the power supply network to retransmit the data received by the first transceiver on the second phasing line (Abstract, lines 1-18; col. 6, line 56-col. 7, lines 1-9; the system comprises a plurality of transmission links L_i, for i=1 through N, and a plurality of repeaters R_i (i.e., transceivers), for i=1 through N-1, that are used to interconnect the transmission links and each repeater repeats the data transmitted from the one transmission link L_i for transmission on the other transmission link L_{i+1}).

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in view of RYE et al. (US 6,229,433 B1).

Regarding claim 4, Belsak discloses a method as claimed in claim 1, but does not particularly disclose wherein the method is characterized in that the data is re-transmitted only on the phasing line (11-13) to which addressees (20-25) of the data are connected.

However, this feature is well known in the art and Rye is evidence of the fact. Rye teaches an appliance control system in which appliances control modules are connected to an existing ac power line and controlled by transmitting address and control or functions codes. Each of the control modules is identified by an unique binary address and receives and decodes the binary coded burst signals transmitted on the ac power line destined to them. When a module detects its address, it performs the prescribed control function in accordance with the binary control signal (Abstract; col. 1, line 61 – col. 2, line 61-47).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Belsak to incorporate the step of re-transmitting on the phasing line to which addressees of the data are connected, as suggested by Rye, in order to assure that the data gets to their addressees.

8. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in view of SANDERSON (US 2002/0109585 A1).

Regarding claim 5, Belsak discloses a method as claimed in claim 1, but fails to particularly disclose wherein the method is characterized in that a preparation, in particular a channel equalization and channel matching, is undertaken before the re-transmission.

However, Sanderson teaches that communication signals transmitted over a power line distribution network undergoes very complicated phase distortions and this phase distortion may be avoided if the power line distribution circuit is compensated or impedance matched (i.e.,

channel matching) or by using an automatic equalizer within the repeater to address this problem (paragraph [0049]).

Therefore, one of ordinary skill in the art at the time of the invention would have been motivated, to modify Belsak to include the step of preparing the data before the re-transmission, in particular a channel equalization and channel matching, as suggested by Sanderson, in order to avoid the phase distortions in communication signals transmitted over power line networks.

9. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in view of BRUCCOLERI et al. (US 2003/0031310 A1).

Regarding claim 7, Belsak discloses a device as claimed in claim 6, characterized in that it comprises a receiver and a transmitter (3 - 5) for each phasing line (11 - 13) of the power supply network (Fig. 3 and 5a; Abstract, lines 1-7; paragraphs [0011]-[0015], [0068], and [0070]; repeaters 71, 72,... are included in each of phase lines P_1, P_2 and P_3 and each include an RF coupler 170 (i.e., receiver) to receive RF signals and a RF antenna 174 (i.e., transmitter) for transmitting RF signals).

But, Belsak fails to particularly disclose wherein all receivers and transmitters are coupled together by a control unit(2).

However, Bruccoleri teaches a control system and method to suppress noise in a power-line based system. As shown in figure 1, device repeaters 18, 20 (i.e., transmitter/receiver) are connected to power lines 28, 30 and coupled to a control device 12 that controls a phase signal of the device repeater to suppress noise during operation of the electrical device associated with the device repeater, furthermore communicates with the repeaters through control signals (Fig. 1; paragraphs [0007], and [0013]). Therefore, it would have been obvious to a person having

ordinary skill in the art at the time of the invention, to modify Belsak to introduce a control unit for coupling all the receivers and transmitters, as suggested by Bruccoleri, in order to control the signals that will remotely control the operation of an electrical device associated with the device repeater.

Regarding claims 12 and 13, Belsak discloses a device as claimed in claim 11, but Belsak does not particularly disclose further comprising: a control unit coupled to the first transceiver and the second transceiver to control a retransmission by the second transceiver of the data on the second phasing line, and wherein the control unit further controls a retransmission by the first transceiver of the data on the first phasing line.

However, Bruccoleri teaches a control system and method to suppress noise in a power-line based system. As shown in figure 1, device repeaters 18, 20 (i.e., transmitter/receiver) are connected to power lines 28, 30 and coupled to a control device 12 that controls a phase signal of the device repeater to suppress noise during operation of the electrical device associated with the device repeater, furthermore communicates with the repeaters through control signals (Fig. 1; paragraphs [0007], and [0013]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Belsak to introduce a control unit for coupling to the first and second transceiver, and wherein the control unit further controls a retransmission by the first transceiver of the data, as suggested by Bruccoleri, in order to control the signals that will remotely control the operation of an electrical device associated with the device repeater (i.e., transceiver).

Regarding claim 14, the combination of Belsak and Bruccoleri disclose a device as claimed in claim 12, in addition Belsak discloses wherein the control unit controls the

retransmission by the second transceiver of the data on the second phasing line based on an original signal strength of the second phasing line being below a threshold value (paragraphs [0011]-[0015], and [0037] lines 1-9; the communication signals transmitted over the power lines are repeated (i.e., re-transmitted) in order to keep the communication signals from being reduced below a predefined level).

Regarding claim 19, the combination of Belsak and Bruccoleri disclose a device as claimed in claim 11, in addition Belsak discloses characterized in that it is equipped with additional transceiver modules for connection to other networks with different transmission methods (paragraphs [0034]-[0036]).

Regarding claim 20, the combination of Belsak and Bruccoleri disclose a device as claimed in claim 11, in addition Belsak discloses characterized in that it is equipped with an additional network filter for separation of an in-home network from an external network, wherein a further transceiver is preferably integrated on the external side, and selected data is routed past the filter (Fig. 3; paragraph [0070]; the repeaters comprises an analog front-end (i.e., filter) which filters and processes the received signals).

10. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in view of FUKAGAWA et al. (US 4,556,865).

Regarding claim 8, Belsak discloses a device as claimed in claim 6, but fails to particularly disclose wherein the device is characterized in that it comprises a storage device for the temporary storage of data transmitted on the phasing lines (11-13) of the power supply network.

However, Fukagawa teaches a data transmission system utilizing a power line comprising a repeater (i.e. device) coupled to a power line, the repeater receives control data from a transmitter and store the control data in a memory (i.e., temporary storage) and then later retransmitted after the lapse of a predetermined period of time (Abstract; col. 2, lines 22-41). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Belsak to incorporate a storage device for the temporary storage of data transmitted on the phasing lines, as suggested by Fukagawa, in order to re-transmit the data transmitted on the phasing lines at a later time.

11. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in views of BRUCCOLERI et al. and RYE et al.

Regarding claim 15, the combination of Belsak and Bruccoleri disclose a device as claimed in claim 12, but the combination fails to particularly disclose wherein the control unit controls the retransmission by the second transceiver of the data on the second phasing line based on the second phasing line being connected to an address of the data.

However, this feature is well known in the art and Rye is evidence of the fact. Rye teaches an appliance control system in which appliances control modules are connected to an existing ac power line and controlled by transmitting address and control or functions codes. Each of the control modules is identified by an unique binary address and receives and decodes the binary coded burst signals transmitted on the ac power line destined to them. When a module detects its address, it performs the prescribed control function in accordance with the binary control signal (Abstract; col. 1, line 61 – col. 2, line 61-47).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify the combination to incorporate the features of wherein the control unit controls the retransmission by the second transceiver of the data on the second phasing line being connected to an address of the data, as suggested by Rye, in order to assure that the data gets to their addressees.

12. **Claims 16-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in views of BRUCCOLERI et al., and SANDERSON.

Regarding claims 16 and 17, the combination of Belsak and Bruccoleri disclose a device as claimed in claim 12, but the combination fails to particularly disclose wherein the control unit prepares the data for retransmission by the second transceiver of the data on the second phasing line, wherein a preparation of the data by the control unit for retransmission by the second transceiver of the data on the second phasing line includes at least one of a channel equalization and a channel matching.

However, Sanderson teaches that communication signals transmitted over a power line distribution network undergoes very complicated phase distortions and this phase distortion may be avoided if the power line distribution circuit is compensated or impedance matched (i.e., channel matching) or by using an automatic equalizer within the repeater to address this problem (paragraph [0049]). Therefore, one of ordinary skill in the art at the time of the invention would have been motivated, to modify Belsak to include the features of preparing the data before the re-transmission, in particular a channel equalization and channel matching, as suggested by Sanderson, in order to avoid the phase distortions in communication signals transmitted over power line networks.

13. **Claim 18** is rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in views of BRUCCOLERI et al., and FUKAGAWA et al.

Regarding claim 18, the combination of Belsak and Bruccoleri disclose a device as claimed in claim 11, but the combination fails to particularly disclose further comprising: a storage device for a temporary storage of all data transmitted on the phasing lines of the power supply network.

However, Fukagawa teaches a data transmission system utilizing a power line comprising a repeater (i.e. device) coupled to a power line, the repeater receives control data from a transmitter and store the control data in a memory (i.e., temporary storage) and then later retransmitted after the lapse of a predetermined period of time (Abstract; col. 2, lines 22-41). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Belsak to incorporate a storage device for the temporary storage of data transmitted on the phasing lines, as suggested by Fukagawa, in order to re-transmit the data transmitted on the phasing lines at a later time.

Prior Art of Record

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) Zalitzky et al. (US 2003/0184433 A1) – Power line communication system.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marisol Figueroa whose telephone number is (571) 272-7840. The examiner can normally be reached on Monday Thru Friday 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available

through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marisol Figueroa
Art Unit 2617

LESTER G. KINCAID
SUPERVISORY PRIMARY EXAMINER